

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0207605F / <i>Wargaming and Simulation Centers</i>
--	---

COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	7.535	7.004	11.894	0.000	11.894	15.586	87.989	52.719	42.946	Continuing	Continuing
672888: <i>Distributed Mission Operations Center (DMOC)</i>	-	7.535	7.004	11.894	0.000	11.894	15.586	87.989	52.719	42.946	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note
 This program, BA 7, PE 0207605F, project 672888, Joint Training Center, is a new start.

A. Mission Description and Budget Item Justification

The Distributed Mission Operations Center (DMOC) provides comprehensive Live, Virtual, and Constructive (LVC) simulation capabilities which prepare warfighters to conduct Joint All-Domain Command & Control (JADC2) operations in air, land, sea, space, and cyber domains for theater-level, full spectrum combat training for Air Force, joint service, and coalition partners. The DMOC training capabilities reach over 40 geographically separated Live, Virtual, and Constructive (LVC) locations across 17 time zones representing such assets as real-world weapon systems, operator-in-the-loop, and constructive or computer-driven simulations. DMOC is responsible for development and integration of scenarios, models, and databases and the integration of participating sites into Virtual Flag (VF) and other Distributed Mission Operations (DMO) training events via numerous network connections, DMOC-developed interoperability tools, and controlled interfaces in support of Air Force, joint, and coalition warfighter readiness. In addition, activities include DMO technology and capability studies/analyses which support both current and future program planning and execution by:

1. **Distributed Mission Operations Capability/Battlespace Systems Development:** The DMOC upgrades and enhances the capabilities of various systems, tools, and simulators to incorporate emerging technology and training requirements into DMO events, such as Virtual Flag (VF) and VF: Coalition (VF:C), to enhance the quality of warfighter training. Activities include Environment Generator development, DMO Tool Development, and Simulator Enhancement. DMOC is in partnership with the US Naval Air Warfare Center-Aircraft Division (NAWCAD) to enhance the capabilities of the Next Generation Threat System (NGTS). The NGTS is the primary environment generator for both Blue and Red Air in DMOC White Force. DMO Tool development includes: a) DMOC Replay Tool (DRT), which facilitates a more complete mission review and debrief capability of the exercises as more sites and systems are added to events; b) enhancement & improvement of the Distributed Interactive Simulation (DIS) Filter and the Doctor-J (Dr. J) tools to enable tactical datalinks to be communicated and translated between disparate simulator and operationally fielded (i.e. live aircraft) communication formats; c) Development of Intelligence, Surveillance, and Reconnaissance (ISR)/Battle Damage Assessment (BDA) to improve damage state models used by intelligence analysts in exercises; and d) development of solutions for integrating Contested Degraded Operations Gateway (CDOG, geographical and communications jamming) into DMO events; and simulator enhancement efforts to incorporate Mission Package standards upgrades into the Control and Reporting Center (CRC) Simulation Package (CSP) to allow a real-world system to be used as a simulator when needed in DMO events.

2. **Assessment & Authorization (A&A)/Software Certification:** The DMOC supports cybersecurity requirements definition, integration/test support, analysis, systems engineering support, A&A of core systems, and support software certification. The DMOC implements cybersecurity requirements and complies with the application of the Risk Management Framework (RMF) and Continuous Monitoring. Efforts include Cross-Domain Information Sharing / Multi-national Information Sharing (CDIS/

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Air Force	Date: March 2023
--	-------------------------

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0207605F / <i>Wargaming and Simulation Centers</i>
--	---

MNIS) ruleset development, load sharing, and testing; integration and testing of various newly developed / updated systems such as the DMOC Replay Tool, Dr. J, DIS Filter, and the DMOC Battlespace; support of Air Force Network Integration Center (AFNIC) software certification.

3. Distributed Training Sites & Systems Integration: DMOC integrates over 40 geographically separated LVC training locations and 50+ systems into LVC DMO training events such as VF and VF:C by resolving interoperability issues between disparate systems and networks so that all exercise participants can interact in the DMO environment. New sites and systems are incorporated into LVC DMO events each year based on higher headquarters and Combatant Commander's (CCDRs) emerging requirements.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Joint Training Center (JTC): Adds training and test capability to 5th generation operation readiness, scales up the Joint Simulation Environment (JSE), and increases operational training capability at Elmendorf AFB.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	7.535	7.004	6.867	0.000	6.867
Current President's Budget	7.535	7.004	11.894	0.000	11.894
Total Adjustments	0.000	0.000	5.027	0.000	5.027
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	5.027	0.000	5.027

Change Summary Explanation

FY24 increase to the current President's Budget funds the Joint Training Center (JTC) new start.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Distributed Mission Operations (DMO) Capability / Battlespace Systems Development	5.081	4.723	4.658	0.000	4.658

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Air Force	Date: March 2023
--	-------------------------

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0207605F / <i>Wargaming and Simulation Centers</i>
--	---

C. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>Description: Simulation software/hardware development in support of users conducting RDT&E, mission rehearsal, and concepts of operation development.</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - DMO tool enhancements. - DMOC/NAWCAD Partnership: Enhance NGTS source code to implement future Air Force DMO requirements, develop/install future versions of DMOC customized NGTS, and focus on increasing NAWCAD partnership/requirements development to better meet AF DMO needs. - Transition battlespace virtualization into operations and explore other virtualized methods to enhance training. - Research and test promising emerging Modeling & Simulation (M&S) technologies for possible integration into DMO training. - Explore and transition to cloud-based software development. - Contract exploration of White Force AI and Battlespace Jamming capabilities through Air Force Research Laboratory (AFRL) contracting vehicle <p>FY 2024 Base Plans:</p> <ul style="list-style-type: none"> - Will complete Battlespace Jamming exploration and continue White Force Artificial Intelligence (AI) exploration through AFRL contracting vehicle - Will redesign and enhance legacy DMO tools. - Will continue DMOC/NAWCAD partnership to enhance NGTS source code to implement future Air Force DMO requirements, develop/install future versions of DMOC customized NGTS, and focus on increasing NAWCAD partnership/requirements development to better meet AF DMO needs. - Will explore additional virtualized methods to enhance training. - Will research and test promising emerging Modeling & Simulation (M&S) technologies for possible integration into DMO training. - Will continue exploration and transitioning to cloud-based software development. <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p>					

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Air Force				Date: March 2023		
Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>		R-1 Program Element (Number/Name) PE 0207605F / <i>Wargaming and Simulation Centers</i>				
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Funding decreased due to \$0.137M reduction in overall program funding from FY23 to FY24. DMOC will slightly scale back various efforts to absorb the decrease.						
<p>Title: Assessment and Authorization (A&A)/Software (A&AS) Certification</p> <p>Description: Support requirements definition, integration test support, scenario development, analysis, systems engineering support, and Certification and Accreditation (C&A) and Networthiness of core systems. Implement requirements of Cybersecurity, Risk Management Framework, and Continuous Monitoring.</p> <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> - Test for the following Assessment and Authorization activities: -- Maintain ATO from HAF/A3 for Battlespace. -- Maintain ATO for Jumper Room with accompanying SSP modifications for event-driven needs. - Assess DMOC software for the AFNIC E/APL process viability and test accordingly - A&A support for virtualization effort. - Support of CVF and RED KITE with CDIS ruleset development, testing, and implementation. - Development of Cross Domain Solutions into LVC training. <p>FY 2024 Base Plans:</p> <ul style="list-style-type: none"> - Will test for the following Assessment and Authorization activities: -- Maintain ATO from HAF/A3 for Battlespace. -- Maintain ATO for Jumper Room with accompanying SSP modifications for event-driven needs. - Will assess DMOC software for the AFNIC E/APL process viability and test accordingly - Will continue A&A support for virtualization effort. - Will support CVF and RED KITE (if required) with CDIS ruleset development, testing, and implementation. - Will continue to develop Cross Domain Solutions into LVC training. <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Funding decreased due to \$0.137M reduction in overall program funding from FY23 to FY24. DMOC will slightly scale back various efforts to absorb the decrease.</p>		0.581	0.540	0.530	0.000	0.530
Title: Distributed Training Sites and Systems Integration		1.873	1.741	1.706	0.000	1.706

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Air Force	Date: March 2023
--	-------------------------

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0207605F / <i>Wargaming and Simulation Centers</i>
--	---

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
---	----------------	----------------	---------------------	--------------------	----------------------

Description: Establish distributed training site system integration and interoperability between DMOC, operational units, and modeling & simulation facilities.

FY 2023 Plans:

- Develop LVC concepts in support of VF/CVF integration efforts.
- Support emerging higher headquarters/CCDR requirements.
- Virtual-into-Live integration and testing with NTTR/VTTC/RF.
- Expand Jumper Room support to CJCS events.
- Expand distributed operations to increase the number of small-scale, joint/coalition events.

FY 2024 Base Plans:

- Will continue to develop LVC concepts in support of VF/CVF integration efforts.
- Will support emerging higher headquarters/CCDR requirements.
- Will develop Virtual-into-Live integration and testing with NTTR/VTTC/RF.
- Will expand Jumper Room support capabilities to CJCS events.
- Will expand distributed operations to increase the number of small-scale, joint/coalition events.

FY 2024 OCO Plans:
N/A

FY 2023 to FY 2024 Increase/Decrease Statement:
Funding decreased due to \$0.137M reduction in overall program funding from FY23 to FY24. DMOC will slightly scale back various efforts to absorb the decrease.

<p>Title: Joint Training Center</p> <p>Description: Supports the Joint Simulation Environment (JSE) CONOPS by providing the Operational Training Capability at Elmendorf, AFB.</p> <p>FY 2023 Plans: N/A</p> <p>FY 2024 Base Plans: Scales the JSE CONOPS</p> <p>FY 2024 OCO Plans:</p>	0.000	0.000	5.000	0.000	5.000
--	-------	-------	-------	-------	-------

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Air Force	Date: March 2023
--	-------------------------

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0207605F / <i>Wargaming and Simulation Centers</i>
--	---

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A					
<i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Enables the department's program decision memorandum.					
Accomplishments/Planned Programs Subtotals	7.535	7.004	11.894	0.000	11.894

D. Other Program Funding Summary (\$ in Millions)
N/A

Remarks
N/A

E. Acquisition Strategy
The DMOC supports AF/Joint/Coalition DMO and the Joint National Training Capability (JNTC) through the development and integration of DMO training and test events, networks, scenarios, and databases. Due to evolving modeling & simulation technology, the DMOC is an on-going, evolutionary effort to keep pace with those changes by continuously developing/upgrading DMO environment generators, systems, and tools and ensuring integration/interoperability of new systems into DMO to provide the best warfighter training possible. DMOC has the following two primary contracts that manage the acquisition, development, testing, and integration of DMO standards, training, modeling and simulation, cross-domain information sharing testbed, and exercises on AF/Joint/Coalition DMO networks. Additionally, Military Interdepartmental Purchase Requests (MIPRs) are sent to other external organizations (i.e. NAWCAD) to fund development of DMO tools that support DMOC efforts.

Infrastructure, Development, and Engineering (IDE) Contract: Develops/upgrades various DMOC tools, systems, and simulators that are needed to conduct DMO training events. Develops, implements, and tests technical solutions for the integration of sites/systems into VF, CVF, and other DMO events. IDE is a firm-fixed-price contract.

Command and Control Technical Support Contract (C2TSC): Supports government by assisting with development of technical requirements for upgrades to various systems and tools that will be developed by the IDE contractor and then performs acceptance testing of the delivered products. Develops requirements for site/system integration of sites/systems into VF, CVF, and other DMO events. C2TSC is a firm-fixed-price contract.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force												Date: March 2023			
Appropriation/Budget Activity 3600 / 7				R-1 Program Element (Number/Name) PE 0207605F / Wargaming and Simulation Centers				Project (Number/Name) 672888 / Distributed Mission Operations Center (DMOC)							
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Distributed Mission Operations (DMO) Capability / Battlespace Systems Development, Certification & Accreditation (C&A) and Networkiness, and Distributed Training Sites& Systems Integration	C/FFP	General Dynamics IT : Kirtland AFB, NM	-	3.989	Nov 2021	1.482	Dec 2022	-		-		-	0.000	5.471	16.935
Distributed Mission Operations (DMO) Capability / Battlespace Systems Development, Certification & Accreditation (C&A) and Networkiness, and Distributed Training Sites & Systems Integration	C/FFP	TBD - Follow-on Contract : Kirtland AFB, NM	-	-		2.768	Mar 2023	4.427	Nov 2023	-		4.427	Continuing	Continuing	24.482
NAWCAD NGTS Development	MIPR	NAWCAD : Patuxent River, MD	-	1.000	Nov 2021	1.000	Feb 2023	1.000	Nov 2023	-		1.000	Continuing	Continuing	-
Artificial Intelligence Integration Into VF (Conceptual Design)	C/CPFF	L3 Technologies, Inc : Kirtland AFB, NM	-	0.500	Apr 2022	0.360	Apr 2023	0.119	Nov 2023	-		0.119	0.000	0.979	1.179
Global Positioning System (GPS) Jamming Integration Into VF (Conceptual Design - Contract 1)	C/CPFF	XL Scientific, LLC Verus Research : Kirtland AFB, NM	-	0.535	Apr 2022	0.109	Nov 2022	-		-		-	0.000	0.644	0.899
Global Positioning System (GPS) Jamming Integration Into VF (Conceptual Design - Contract 2)	C/CPFF	Scientific Research Corp, Inc : Kirtland AFB, NM	-	0.244	Apr 2022	-		-		-		-	0.000	0.244	0.244
Joint Training Center	C/CPAF	TBD : Elmendorf AFB, AL	-	-		-		5.000	Dec 2023	-		5.000	Continuing	Continuing	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force												Date: March 2023			
Appropriation/Budget Activity 3600 / 7				R-1 Program Element (Number/Name) PE 0207605F / Wargaming and Simulation Centers				Project (Number/Name) 672888 / Distributed Mission Operations Center (DMOC)							
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	6.268		5.719		10.546		-		10.546	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Technical requirements development, integration/ acceptance testing, and engineering support	C/FFP	River Tech, LLC : Kirtland AFB, NM	-	0.955	Jan 2022	0.959	Jan 2023	-		-		-	0.000	1.914	4.759
Technical requirements development, integration/ acceptance testing, and engineering support (Follow-on Contract)	C/FFP	TBD - Follow-on Contract : Kirtland AFB, NM	-	-		-		1.012	Mar 2024	-		1.012	Continuing	Continuing	5.592
Subtotal			-	0.955		0.959		1.012		-		1.012	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
DMOC Program Management Office Support	Various	705 CTS : Kirtland AFB, NM	-	0.312	Oct 2021	0.326	Oct 2022	0.336	Oct 2023	-		0.336	Continuing	Continuing	-
Subtotal			-	0.312		0.326		0.336		-		0.336	Continuing	Continuing	N/A
Project Cost Totals			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	7.535		7.004		11.894		-		11.894	Continuing	Continuing	N/A
Remarks															

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207605F / <i>Wargaming and Simulation Centers</i>	Project (Number/Name) 672888 / <i>Distributed Mission Operations Center (DMOC)</i>

FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

DMO	
DMO Capability / Battlespace Systems Development	
Virtual Flag (VF)	
Virtual Flag / Coalition Virtual Flag exercises	
Joint Training Center (JTC)	
Joint Simulation Environment events	

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207605F / <i>Wargaming and Simulation Centers</i>	Project (Number/Name) 672888 / <i>Distributed Mission Operations Center (DMOC)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>DMO</i>				
DMO Capability / Battlespace Systems Development	1	2022	4	2028
<i>Virtual Flag (VF)</i>				
Virtual Flag / Coalition Virtual Flag exercises	1	2022	4	2028
<i>Joint Training Center (JTC)</i>				
Joint Simulation Environment events	1	2024	4	2028